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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,316	07/25/2003	Timothy Neill	200208568-1	1916

22879 7590 08/23/2006

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EXAMINER

TRAN, CHUC

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/627,316

Applicant(s)

NEILL ET AL

Examiner

Chuc D. Tran

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19, 27-29, 31 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 27-29, 31-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07/25/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-19, 27-29 and 31-32 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-9, 11-19, 27-29 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Taubman (USP. 6,842,149).

Regarding claim 1, Taubman discloses a radio module for an electrical device in Fig. 1, comprising:

- a radio transceiver (17); an antenna (14) electrically coupled to the radio transceiver (Fig. 1); and
- an electromagnetic shield (18) disposed around the antenna to isolate the antenna from loading effects of components of the electrical device that are external to the radio module (Col. 1, Line 34).

Regarding claim 2, Taubman discloses that the radio module is adapted to be secured to a side of the electrical device (Fig. 1).

Regarding claim 3, Taubman discloses that a printed circuit board (20), wherein the antenna is disposed on the printed circuit board (Fig. 1).

Regarding claim 4, Taubman discloses that the shield comprises a metal plate coupled to the printed circuit board (Fig. 4) (Col. 3, Line 60).

Regarding claim 5, Taubman discloses that the shield is disposed relative to the transceiver to isolate the transceiver from electromagnetic interference from electrical components within the electrical device (Col. 1, Line 58).

Regarding claim 6, Taubman discloses that a cover (10) disposed over the antenna and adapted to extend through an opening in the side of the electrical device, the cover comprising a material that is generally transparent to radio signals (Col. 1, Line 56).

Regarding claim 7, Taubman discloses that the shield comprises a housing (10) disposed around the antenna, the housing having a portion generally transparent to radio signals from the antenna (Col. 1, Line 56).

Regarding claim 8, Taubman discloses that the housing is disposed around the transceiver (Fig. 1).

Regarding claim 9, Taubman discloses that the housing comprises a conductive metal (Col. 1, Line 38).

Regarding claim 11, Taubman discloses that the housing comprises a periodic band-gap material (Col. 4, Line 50).

Regarding claim 12, Taubman disclose a radio module in Fig. 1, comprising:

- a printed circuit board (20); an antenna (14) disposed on the printed circuit board; and

- an electromagnetic shield (18) extending from the printed circuit board around the antenna to isolate the antenna from loading effects of components of the electronic device that are external to the radio module (Col. 1, Line 58).

Regarding claim 13, Taubman discloses that a radio transceiver (17) disposed on the printed circuit board and electrically coupled to the antenna (Fig. 1).

Regarding claim 14, Taubman discloses that the radio module is adapted to be coupled to an enclosure and, wherein, the electromagnetic shield is adapted to extend from the printed circuit board to the enclosure (Fig. 1).

Regarding claim 15, Taubman discloses that the shield comprises a portion generally transparent to radio signals produced by the radio module, the portion being disposed in facing relationship with the antenna (Col. 1, line 56).

Regarding claim 16, Taubman discloses that the antenna is disposed within the enclosure (Fig. 1).

Regarding claim 17, Taubman discloses that the radio module further comprises a cover (10) disposed over the antenna, the cover being generally transparent to radio signals at the operating frequency of the radio module (Col. 1, Line 56).

Regarding claim 18, Taubman discloses that the shield comprises a metal plate disposed on the printed circuit board (Fig. 1).

Regarding claim 19, Taubman discloses that the metal plate is disposed on the side of the printed circuit board opposite the antenna (Fig. 1).

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Claims (method) 27-29 and 32 given the apparatus of a radio module for an electrical device as applied to claims 1-19 (apparatus), the method for the apparatus as claimed in claims 27-29 and 32 is inherent.

Regarding claim 27, Taubman disclose a method of manufacturing a radio module for use within an electrical device, comprising:

- tuning an antenna to produce a maximum output at a defined load (Col. 2, Line 42); and disposing a shield (18) around the antenna to establish the defined load on the antenna, and to isolate the antenna from electrical noise generated by electrical components within the electrical device but external to the radio module (Col. 1, Line 68).

Regarding claim 28, Taubman discloses that an antenna housing around a perimeter of the antenna (Fig. 1).

Regarding claim 29, Taubman discloses that disposing the antenna on a printed circuit board and disposing a conductive plate on the printed circuit board opposite the antenna (Fig. 1).

Regarding claim 32, Taubman discloses that fabricating the shield with an open side to enable radio signals to be transmitted to and received by the antenna (Col. 1, line 56).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 10 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taubman in view of Carillo, Jr. et al.

Regarding claims 10 and 31, Taubman discloses a radio module for electrical device as set forth in the claims, but Taubman does not go to details of the housing comprise a polymeric material having a conductive coating, and fabricating the shield with a conductively-coated plastic foam. Carillo disclose device for radiation shielding wireless antenna comprising the polymeric material having a conductive coating, and fabricating the shield with a conductively-coated plastic foam (Carillo, Page 5, Col. 2, Line 43). It would have been obvious to one having ordinary skill to modify Taubman's antenna by adding the polymeric material having a conductive coating, and fabricating the shield with a conductively-coated plastic foam as taught by Carillo for reducing the electromagnetic field radiation emanating from the electronic equipment (See Carillo, Page 1, Col. 1, Line 38).

Citation of relevant prior art

Prior art Wilz (USP. 6,204,825) disclose Hybrid printed circuit board shield and antenna.

Prior art Toyoda et al (USP. 6,785,519) disclose portable telephone.

Prior art Mathews et al (USP. 6,686,649) disclose multi-chip semiconductor package.

Prior art Castaneda et al (USP. 5,596,487) disclose apparatus for RF shielding radio circuit.

Prior art Pirila et al (USP. 6,417,817) disclose integrated antenna ground plate and EMC shield structure.

Prior art Satoh et al (USP. 6,763,245) disclose portable phone device.

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Prior art Kitakubo et al (USP. 5,731,964) disclose electromagnetic-wave shielding device.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D. Tran whose telephone number is (571) 272-1829. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC
August 18, 2006



HOANG V. NGUYEN
PRIMARY EXAMINER